Indian Institute of Technology Patna
CS1101- Foundations of Programming

Lab11: Strings, 2D, Dynamic Memory

Date: 21-10-2025

Work in a separate directory named **Lab11**.

Task1: Carefully explore the provided Lab11_strings.*c* and Lab11_strings_pitfalls.c program segments. Study each segment demonstrated in the code, and document in your lab record any constructs or features that are new to you, along with brief notes on your observations.

Task2: Carefully explore the provided 2Darray_DynamicMemory_demos.c program segments. Study each segment demonstrated in the code, and document in your lab record any constructs or features that are new to you, along with brief notes on your observations.

Task3: Write a C program that checks if two given strings are anagrams of each other. An *anagram* is a word or phrase formed by rearranging the letters of another word or phrase, using all the original letters exactly once. ("earth" ? "heart"; "evil" ? "vile")

- Prompt the user to enter two strings.
- Display **"Anagram"** if the two strings are anagrams.
- Display **"Not anagram"** if they are not.

Example:

Enter string 1: listen

Enter string 2: silent

Anagram

Enter string 1: gram

Enter string 2: arm

Not anagram

Task4: Write a C program that counts the number of vowels and consonants in a given string.

Requirements:

- Prompt the user to enter a string.
- Consider both uppercase and lowercase letters.
- Ignore non-alphabetic characters (like digits, spaces, punctuation).
- Print the counts of vowels and consonants separately.

Enter a string: hello world!

Vowels: 3

Consonants: 7

Enter a string: OpenAI ChatGPT 123

Vowels: 5

Consonants: 7

In Record: Task1 , Task 2